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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,903	10/31/2003	Jacob Augustine	200311727-1	3619

22879 7590 03/21/2008

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EXAMINER	
TORRES, JOSE	

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
03/21/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/698,903	AUGUSTINE ET AL.	
	Examiner	Art Unit	
	JOSE M. TORRES	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-14,17-22 and 25-27* is/are rejected.

7)☒ Claim(s) *4, 5, 15, 16, 23 and 24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Comments

1. The Amendment – After Non-Final Rejection filed on December 3, 2007 has been entered and made of record.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 6, 9, 10, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Shen et al. (U.S. Pat. No. 5,956,088).

Re claim 1: Shen et al. disclose a method of performing region-of-interest editing of a video stream in the compressed domain, said method comprising: receiving a video stream frame (FIG. 1, "Uncompressed Video **103**") comprising an unwanted portion and a region-of-interest portion ("Variety of scenes", FIG. 1, "Program Source **101**", Col. 1 lines 10-42 and Col. 6 lines 27-45); compressing said video stream frame ("Video Compression Process") to obtain a compressed video stream frame (FIG. 1, "Encoder **105**", Col. 6 lines 27-45); and editing said compressed video stream ("Modification of the signal") frame to modify said unwanted portion and obtain a compressed video stream frame comprising said

region-of-interest portion while maintaining an original structure of said video stream ("The output **617** of FIG. 6 is compatible with conventional receiver systems", Col. 9 lines 8-29 and Col. 13 lines 4-9. It should be noted that the region-of-interest portion and the unwanted portion are the variety of scenes (e.g. scenes containing complex details and scenes lacking in motion).).

Re claim 2: Shen et al. disclose wherein said compressed video stream frame conforms to a defined video stream compression standard including the MPEG-2 standard ("MPEG-2 Standard", Col. 6 lines 27-45).

Re claim 3: Shen et al. disclose wherein said editing compressed video stream frame is selected from the group consisting of skipping macroblocks and deleting discrete cosine transform coefficients in said unwanted portion ("Modifying according to the present invention, discards the DCT coefficients that are present in some of the macroblocks", Col. 10 lines 41-67).

Re claim 6: Shen et al. disclose further including transmitting said compressed video stream frame ("transmitted directly to a data channel for broadcasting or other transfer", Col. 6 lines 27-45) from a first location to a second location ("remote encoding, indicating that encoding and multiplexing are remote in time, location", Col. 2 lines 43-53) for decoding (Abstract) and displaying of said video stream at said second location (Col. 10 lines 21-32).

Re claim 9: Shen et al. disclose further including receiving and decoding said compressed video stream frame at said second location (Abstract and Col. 2 lines 43-53).

Re claim 10: Shen et al. disclose further including displaying said edited video stream frame at said second location (Since it is a remote encoding system the displaying is being performed at a remote location, Col. 10 lines 21-32.).

Re claim 13: Shen et al. disclose wherein said video stream frame is edited in real time ("An additional advantage of the method is that it is relatively straightforward to implement in real time", Col. 10 lines 7-20).

Re claim 14: Shen et al. disclose a region-of-interest editing system ("Video Encoding System") for performing region-of-interest editing of a video stream in the compressed domain, said system comprising: a computer system (FIG. 1, "Program Source **101**") for receiving a video stream frame (FIG. 1, "Uncompressed Video **103**") comprising an unwanted portion and a region-of-interest portion ("Variety of Scenes", Col. 1 lines 10-28 and Col. 6 lines 27-45); a compressor (FIG. 1, "Encoder **105**") for compressing said video stream frame ("Video Compression Process") to obtain a compressed video stream frame (FIG. 1, "Compressed Output **107**"), said compressor un communication with

said computer system (Col. 6 lines 27-45); and a region-of-interest editor for editing said compressed video stream frame to modify said unwanted portion and obtain a compressed video stream frame comprising said region-of-interest portion ("Modification of the signal"), said region-of-interest editor in communication with said compressor while maintaining an original structure of said video stream ("The output **617** of FIG. 6 is compatible with conventional receiver systems", Col. 9 lines 8-29 and Col. 13 lines 4-9. It should be noted that the region-of-interest portion and the unwanted portion are the variety of scenes (e.g. scenes containing complex details and scenes lacking in motion).).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen et al.

As to claim 21, Shen et al. teaches a method of region-of-interest editing video stream in the compressed domain (Refer to claim 1 above).

However, Shen et al. does not explicitly disclose a computer-readable medium including computer implementable instructions stored therein, said instructions for causing a computer system to perform the method.

Shen et al. teach a Storage **109**, shown in FIG. 2A. It is therefore, obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method as a "program" on the storage, in order to impart its "process" functionality in a computer environment (e.g. Processor, Memory), as it is known to a person of ordinary skill in the art, and make it readily available to conventional devices.

As to claim 22, Shen et al. teaches wherein said compressed video stream frame conforms to a defined video stream compression standard including the MPEG-2 standard ("MPEG-2 Standard", Col. 6 lines 27-45).

6. Claims 7, 8, 17, 18, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen et al. in view of Maki et al. (U.S. Pat. No. 6,072,903). The teachings of Shen et al. have been discussed above.

As to claims 7, 8, 17, 18, 25 and 26, Shen et al. does not explicitly disclose wherein said region-of-interest portion is defined by changing position coordinates in said video stream, further including a head-tracking system to locate in real time said changing positional coordinates of said region-of-interest.

Maki et al. teaches wherein said region-of-interest portion is defined by changing position coordinates in said video stream ("Modifying a Relation", Col. 24 lines 29-39 and lines 52-58), further including a head-tracking system to locate in real time said changing positional coordinates of said region-of-interest ("Head-Tracking", Col. 23 lines 56-53).

Therefore, in view of Maki et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Shen et al. by incorporating the head-tracking to identify the complex scenes and the lack of motion scenes and modifying a relation from the positional coordinates in order to enable head tracking and reduce the amount of information necessary for the transmission of images by extracting motion vector information (Col. 23 lines 56-63 and Col. 24 lines 40-46).

7. Claims 11 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen et al. in view of Ratnakar (U.S. Pat. No. 6,928,186). The teachings of Shen et al. have been discussed above.

As to claims 11 and 27, Shen et al. does not explicitly disclose wherein said modifying of said unwanted portions is performed in a manner that avoids modifying macroblocks proximate to said region-of-interest, thereby creating a guard ring of pixels around said region-of-interest.

Ratnakar teaches wherein said modifying of said unwanted portions is performed in a manner that avoids modifying macroblocks proximate to said region-of-interest, thereby creating a guard ring of pixels around said region-of-interest (The macroblocks cropped out contain the region-of-interest (macroblocks with highest score) at its center. Col. 4 line 56 through Col. 5 line 3).

Therefore, in view of Ratnakar, it would have been obvious to one of ordinary skill in the art to modify Shen et al. by incorporating the macorblock scoring scheme to identify the variety of scenes and containing the regions with less motion within

macroblocks in order to provide an efficient and effective algorithm, while retaining the semantically most relevant part of the image (Col. 6 lines 22-39).

8. Claims 12, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen et al. in view of Wang et al. (U.S. Pat. No. 7,158,861). The teachings of Shen et al. have been discussed above.

As to claim 12, Shen et al. does not explicitly disclose wherein said region-of-interest portion is selected from an image of a user at said first location and an image of robotic surrogate environment at said second location, said user and said robotic surrogate in communication with each other via a computer network.

Wang et al. teaches wherein said region-of-interest portion is selected from an image of a user at said first location and an image of robotic surrogate environment at said second location, said user and said robotic surrogate in communication with each other via a computer network (FIG. 1, "Operator and Patient Environment, and Network **18**", Col. 2 lines 25-52).

Therefore, in view of Wang et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Shen et al. by incorporating the operator and patient environment in order to provide a system where the user need not to be physically present at the encoding location (Col. 2 lines 25-41).

As to claims 19 and 10, Shen et al. does not explicitly disclose a user immersion location for accommodating a user; a remotely operable robotic surrogate disposed

remotely from and in communication with said user at said user immersion location, said user capable of remotely operating said robotic surrogate from said user immersion location to display said vide; a computer system for recording said video stream at user immersion location and for transmitting said compressed video stream frame from said user immersion location to said robotic surrogate; a computer system for decoding and displaying said compressed video stream frame on said robotic surrogate; a computer system for recording full-frame size video stream frames at said robotic surrogate; a transmitter for transmitting said compressed video stream frame from said robotic surrogate to said user immersion location; and a decoder for decoding and displaying said compressed video stream frame at said user immersion location.

Wang et al. teaches a user immersion location for accommodating a user (FIG. 1, "Operator Environment", Col. 2 lines 25-52); a remotely operable robotic surrogate (FIG. 1, "Robot **12**") disposed remotely from and in communication with said user at said user immersion location, said user capable of remotely operating said robotic surrogate from said user immersion location to display said video (Col. 2 line 53 through Col. 3 line 2); a computer system (FIG. 1, "Camera **26**") for recording said video stream at user immersion location and for transmitting said compressed video stream frame from said user immersion location to said robotic surrogate (Col. 3 lines 20-25); a computer system for decoding and displaying said compressed video stream frame on said robotic surrogate (Col. 3 lines 35-50); a computer system (FIG. 1, "Camera **38**") for recording full-frame size video stream frames at said robotic surrogate (Col. 3 lines 3-19); a transmitter (FIG. 2, "Wireless Transceiver **74**") for transmitting said compressed

video stream frame from said robotic surrogate to said user immersion location (Col. 3 lines 35-50); and a decoder for decoding and displaying said compressed video stream frame at said user immersion location (Col. 3 lines 51-60).

Therefore, in view of Wang et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Shen et al. by incorporating the operator and patient environment in order to provide a system where the user need not to be physically present at the encoding location (Col. 2 lines 25-41).

Allowable Subject Matter

9. Claims 4, 5, 15, 16, 23 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the closest prior art made of record fails to teach or suggest the compressed domain editing process as skipping macroblocks located above, below and to the right of the region-of-interest for predictive coded frames and bi-directionally predictive frames in the video stream and deleting discrete cosine transform coefficients to the left of said region-of-interest for predictive coded frames and bi-directionally predictive-coded frames, and deleting discrete cosine transform coefficients outside the region-of-interest portion for intracoded frames.

Response to Arguments

Claim Rejections under 35 U.S.C. § 103

10. Applicant's arguments with respect to claims 1-3, 6-14, 17-22 and 25-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Suzuki et al. disclose a Picture Encoding Device and Method Thereof, Picture Decoding Device and Method Thereof, and Recording Medium.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSE M. TORRES whose telephone number is (571)270-1356. The examiner can normally be reached on M-F: 8:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMT
02/26/2008
/Jingge Wu/
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